

REMARKS

This is in response to the Office Action of February 27, 2009, in which all of pending claims 1-21 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 7,085,805 to Ruberg et al. in view of U.S. Patent No. 7,000,037 to Rabinovitz et al. and U.S. Patent No. 7,190,477 to Ferlitsch. With this Amendment, claims 1, 8, 9, 10, 13, 14, 19, 20, and 21 are amended. Claims 1-21 are pending in the present application.

Claim Rejections

Claims 1-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ruberg et al. (7,085,805) in view of Rabinovitz et al. (7,000,037) and Ferlitsch (7,190,477). None of claims 1-21 are rendered obvious by Ruberg et al. in view Rabinovitz et al. and Ferlitsch, because each claim requires at least one element that is not taught or suggested by the references, alone or in combination, and that would not have been obvious to an ordinarily skilled artisan with knowledge of the three references.

Independent claims 1 and 14, as amended, requires a device server with two distinct memory types: one that always operates under a FIFO algorithm (FIFO register) and one that is free to operate under any available queuing algorithm (memory queue). Each serial device that is connected to the device server has a set of these memory types allocated for its specific use. The key to this aspect of the invention is the manner in which data is transferred between these two memory types while the serial device is operating. By writing portions of the received serial port data immediately to the FIFO register if the queue is empty, the device server does not have to take the time to perform whatever queuing algorithm is in use at that time and then move the data from the memory queue to the FIFO register. Skipping these queue decision and transfer steps when they are not needed gets data to the serial device faster.

None of the references discuss a dual memory structure or suggest a method anything like this for improving the flow of data to the serial devices. Ruberg et al. does discuss a queue, but only in the context of storing requests for service on the device server when the desired serial devices are **not available** (col. 14, lines 26-34). Ruberg et al. says nothing about

writing portions of the data to the queue of a serial device depending on its emptiness. The portions relied upon (col. 9, line 55 – col. 12, line 55; col. 13, lines 5 – 40) discuss only a process for matching up the capabilities of the available serial devices in the network with the requests for service. While it does mention services waiting for the serial device information to arrive and either taking the first serial device with capabilities that match their needs or waiting until all available serial device information has arrived before deciding which serial device to use, Ruberg et al. does not discuss any queue associated with service requests for **available** devices. In contrast, the present invention provides its advantage when the serial device **is available**, bypassing the memory queue altogether when it is empty.

Rabinovitz et al. states a goal of faster data throughput in the context of storing data on disk drives, but says nothing about a dual memory structure or skipping queuing and transfer steps between the memory types when it is not necessary, mentioning only a few commercially available types of serial to parallel and parallel to serial interface chips. Similarly, although Ferlitsch mentions FIFO as one of several algorithms that can be used to move data out of a memory queue, Ferlitsch says nothing about a dual memory structure or skipping queuing and transfer steps between the memory types.

Because none of the references, separately or in combination, say anything about a dual memory structure and using that structure to improve the flow of serial data by skipping queuing and transfer steps between the memory types, when it is not necessary, they do not teach all limitations of claims 1 and 14 and the rejection of claims 1 and 14 under 35 U.S.C. §103(a) should be withdrawn.

Independent claims 8 and 20 have been amended as recommended in the Office Action to eliminate the term “semi-blocking” and substitute a clear statement of what is claimed. With this amendment, it is clear that Ruberg et al. does not teach this limitation because it says nothing about the detailed transfer of serial data from the device server buffer to a memory queue associated with a serial device. Thus, the rejection of claims 8 and 20 under 35 U.S.C. § 103(a) should be withdrawn.

Independent claims 13 and 19, as amended, clarify the meaning and use of the

intercharacter interval to signal the end of a read operation. The inventive aspect of the claim is to supply a flag in place of the intercharacter interval to signal the end of a read operation because an accurate intercharacter interval signal can be lost to network delays. Ruberg et al. does disclose the use of time stamps associated with device records to determine which device belongs to which DTU upon restart of a DTU, but this is not relevant to the claims at issue. Time stamping a device record does not assist the host computer in determining the end of a read operation. Because Ruberg et al. does not teach the use of a flag in place of the intercharacter interval to signal the end of a read operation, it does not teach this limitation and rejection of claims 13 and 19 under 35 U.S.C. §103 (a) should be withdrawn.

Claims 2-7 depend directly or indirectly from independent claim 1; claims 9-12 depend directly or indirectly from independent claim 8; claims 15-18 depend directly or indirectly from independent claim 14; and claim 21 depends directly from independent claim 20. As discussed above, claims 1, 8, 14 and 20 are now in condition for allowance. Thus, claims 2-7, 9-12, 15-18, and 20 are allowable with their respective independent base claims.

CONCLUSION

In view of the foregoing, it is believed that all claims in the present application are in condition for allowance. Reconsideration and allowance of claims 1-21 are respectfully requested.

The Commissioner is authorized to charge any additional fees associated with this paper or credit any overpayment to Deposit Account No. 11-0982.

Respectfully submitted,

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